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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/29/2001

Shiro Kano

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EXAMINER

STEVENSON, ANDRE C

ART UNIT

PAPER NUMBER

2812

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/997,065	<b>Applicant(s)</b> KANO, SHIRO	
	<b>Examiner</b> Andre' C. Stevenson	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

**Attachment(s)**

- |   |  |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) ____.   |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 20) <input type="checkbox"/> Other: _____                                    |

### **Detail Action**

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09997065, filed on November 29, 2001.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims **1** through **7** are rejected under 35 U.S.C. 102(a) as being unpatentable over Tahikawa et al (U.S. Pat. No.6264611 B1).

Tahikawa et al (U.S. Pat. No.6264611 B1), for **Claim #1**, a non-contact temperature measuring apparatus, comprising: spherical semiconductors mounted to a measurement's object and each having a surface thereof integrally formed with an electronic circuit and mounted with a coil (**Abstract, Fig. 2b, Column 3, lines 65 through 67, Column 4, lines 1 through 15**); and a data collector, disposed out of contact with said spherical semiconductors, for supplying said spherical semiconductors with electric power required to operate said electronic circuits and for collecting pieces

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of temperature information transmitted from said spherical semiconductors, wherein said electronic circuit of each of the spherical semiconductors is provided with a memory for storing identification information proper to the spherical semiconductor **(Column 4, lines 16 through 32)**; a power source section for generating internal power, required to operate said electronic circuit, from electromagnetic energy received through said coil from outside **(Column 7, lines 52 through 61, Column 8, lines 1 through 4)**; a sensing circuit including a thermosensitive element responsive to a temperature of the measurement object; and a transmitter for transmitting, as the temperature information, an output of said sensing circuit through said coil when the identification information stored in said memory is specified by said data collector **(Column 8, lines 37 through 61)**, and said data collector is provided with an energy source for generating electromagnetic energy; a transmitter for transmitting identification information to specify an arbitrary one of said spherical semiconductors; and a receiver for detecting the temperature information transmitted from the specified spherical semiconductor **(Column 8, lines 62 through 67, Column 9, lines 1 through 8)**.

With respect to **Claim #2**, a non-contact temperature measuring apparatus according to claim 1, wherein said coil and said thermosensitive element mounted on said each spherical semiconductor are disposed diametrically opposite to each other, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1), (Fig. 2b, item 28, Column 5, lines 24 through 39).

Furthermore, **Claim #3**, a non-contact temperature measuring apparatus according to claim 1, wherein the measurement object is a semiconductor wafer, and said thermosensitive element is embedded into a surface layer of the semiconductor wafer, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1), (Column 10, lines 14 through 32).

Considering now, **Claim #4**, a non-contact temperature measuring apparatus according to claim 1, wherein said memory of said each spherical semiconductor is a nonvolatile memory that retains is the identification information even when the internal power disappears, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1) (Fig 16, item 1338, Fig 13, item 1339, Column 4, lines 33 through 42, Column 11, lines 17 through 42).

With respect to **Claim #5**, a non-contact temperature measuring method, comprising the steps of: (a) substantially uniformly distributing the spherical semiconductors of the non-contact temperature measuring apparatus as set forth in any one of claims 1-4 on a measurement object; (b) simultaneously supplying the spherical semiconductors with electric power from the data collector of said apparatus, to thereby permit the spherical semiconductors to detect temperatures of different points on the measurement object; (c) contactlessly collecting, by the data collector, pieces of temperature information indicative of the detected temperatures and transmitted from the spherical semiconductors; and (d) determining temperatures of or a temperature

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distribution throughout the measurement object based on the pieces of temperature information by the data collector, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1) (Abstract, Fig. 2b, Column 3, lines 65 through 67, Column 4, lines 1 through 15, Column 4, lines 16 through 32, Column 7, lines 52 through 61, Column 8, lines 1 through 4, Column 8, lines 37 through 61, Column 8, lines 62 through 67, Column 9, lines 1 through 8).

Furthermore, **Claim #6**, a non-contact temperature measuring method according to claim 5, wherein said step (a) includes disposing one of the spherical semiconductors at a center of a surface of a semiconductor wafer serving as the measurement object and disposing remaining spherical semiconductors at equal angular intervals on a circumference of at least one imaginary circle centered at the center of the surface of the semiconductor wafer, and said step (b) includes detecting surface temperatures of different points on the semiconductor wafer, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1) (Fig. 5, 6 and 9, Column 6, lines 66 through 67, Column 7 line 1 through 17, Column 14 line 41 through 67).

Considering now, **Claim #7**, a non-contact temperature measuring method according to claim 5, wherein said step (c) includes sequentially collecting pieces of identification information which are proper to the spherical semiconductors, respectively, and each of which is transmitted from a corresponding one of the spherical semiconductors together with the temperature information, and said step (d) includes

determining the temperature distribution throughout the measurement object in accordance with the pieces of temperature information and the pieces of identification information, is taught by Tahikawa et al (U.S. Pat. No.6264611 B1) (Column 4, lines 15 through 32).

## **Objected Matter**

Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Claim #8**

- ✓ Includes correcting the temperature information to be transmitted from each spherical semiconductor in accordance with temperature correction information determined for each spherical semiconductor.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866 – 217 – 9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre' Stevenson whose telephone number is (571) 272 1683. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached on (571) 272 1679. The fax phone number for the organization where this application or proceeding is assigned is (703) 308 7724.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956. Also, the proceeding numbers can be used to fax information through the Right Fax system;

**(703) 872-9306**

Andre' Stevenson

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04/29/04

  
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